

Unit Planning Guide: Grade 4 Unit 7 of 8

Unit Title: Geometry	Pacing (Duration of Unit): 5 weeks
Grade: 4	Buffer Day(s):

Desired Results

Transfer Goals

Students will be able to independently use their learning to:

- **Make sense of problems and persevere in solving them.**
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- **Model with mathematics.**
- **Use appropriate tools strategically.**
- **Attend to precision.**
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

Standards (Priority Standards in bold):

- **4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.**
- **4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.**
- **4.G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.** **4.MD.1 Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...**

WIDA for English Language Learners

Standard 1: ELLs **communicate** for **Social** and **Instructional** purposes within the school setting

Standard 3: ELLs **communicate** information, ideas and concepts necessary for academic success in the content area of **Mathematics**

In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) this curriculum map, 2.) a list of their ELLs and their proficiency levels, and 3.) appropriate language function expectations and scaffolds or supports.

- **4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:**
 - a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.
 - b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.
- **4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.**
- **4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.**

Meaning (*Mostly assessed through Performance Tasks/Assessments)

Big Ideas: (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)

- An angle is part of a circle
- Geometric figures can be classified based on their properties of sides, angles, and symmetry.
- Combining shapes creates other shapes.

Essential Questions: (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)

- How can angle and side measures help classify objects?
- What properties do geometric objects have in common?
- What other ways, tools, or methods can be used to measure angles?

Acquisition (*Mostly assessed through traditional summative assessments)

Knowledge: Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.

Students will know ...

- angles are formed whenever two rays share a common endpoint
- the degree of an angle is a fractional part of a circular arc.
- when an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measure of the parts.

Key Academic Vocabulary:

- Protractor
- Angle
- Degree
- Points
- Lines
- Line Segment
- Perpendicular
- Congruent
- Similar
- Symmetry
- Two-dimensional figure
- parallel

Skills: The discrete skills and process students should be able to use independently (Bloom's Level of Learning should be noted in parentheses.)

Students will be skilled at:

- classifying two dimensional figures (Comprehension)
- recognizing lines of symmetry (Knowledge)
- identifying right angles (Analysis)
- identifying symmetric angles (Analysis)
- measuring angles using a protractor (application)
- sketching angles of specific measure (application)
- identifying unknown angles in a diagram (Analysis)